

# LETTERS *to the Editor*

## Medical Curricula: Relevance Then to Now, and Now to Now

*To the Editor:* Physicians who represent a variety of roles in medicine have been heard in the forum on Relevance in Medical Education,\* but I am probably the first one to have taken the medical curriculum a second time around. I retired in 1967, after 40 years in the practice of pediatrics. During that time, I had taught students from both Stanford and University of California, San Francisco. Upon retirement, and with the permission of the Dean, I re-entered the University of California, San Francisco, School of Medicine as a freshman, and am now completing my junior year. My original training was at the University of Minnesota, where I received my Bachelor's, Master's, and Doctor of Medicine degrees (1922 to 1925). I interned at Children's Hospital in San Francisco.

Based on the above experience, I would design a medical curriculum something like this:

I. *Premedical training* would be reduced to two years, with required courses in biology, chemistry, physics, mathematics and Latin. Most students have been in school continuously since they were three to five years of age. They should have acquired the three R's and some knowledge of the humanities by the end of two years in col-

lege; if not, education at the lower levels should be upgraded. The brighter students should be able to finish high school in three years. Either after high school or after two years of college, premedical students should spend a year in gainful employment in a hospital or health center. This requirement could be waived for individuals who had worked during summer vacations.

II. *The basic sciences.* Two years should be allowed for these subjects; the time which has been eroded from the basic sciences by clinical courses should be restored. Physicians should know the structure and function of the body, in order to take good care of human beings. A mechanic is expected to know his machine and the veterinarian his animal. Why should we then accept physicians who do not know human anatomy, biochemistry or physiology?

In some schools, embryology has been deleted, even in premedicine. However, human development—including genetics, embryonic and fetal development, birth and early childhood influences—determines the end product, and injuries and abnormalities which arise during the period of rapid growth in the fetus or postnatally, may be the antecedents to many later ills.

Physicians and other health personnel are increasingly aware that medical students and house staff do not have a medical vocabulary; in one week I heard this from a pediatrician, an obstetrician, and a physiotherapist and earlier from several surgeons and a pathologist. In anatomy, where vocabulary should be learned, the course has been reduced to ten or twelve weeks or less. Students who have carried their childhood permissiveness into adulthood, at least in part, have been instrumental in bringing about this reduction in time and requirements. Instead of less, there should be more knowledge about the body;

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genetic variations are almost always imprinted on the anatomy. To the usual course in gross anatomy, some instruction should be added in anthropology, anthropometry and dermatoglyphics, for the astute physician gets many of his clues from simple inspection. Recall that Leonardo da Vinci and Michelangelo resorted to grave-robbing in order to dissect and thereby better portray, in art, the form and function of the body. Should the modern physician be content with less knowledge of the body?

With such new techniques as electrophoresis, it is possible to have a complete pattern of an individual's enzymes, proteins, lipids and carbohydrates. Instead of complicating the study of medicine, these techniques simplify and elucidate the subjects of chemistry, physiology and endocrinology. In contrast to the anatomical and chemical studies, microbiology and pharmacology, which deal with external influences on the body, are more subject to change. Infectious diseases have been greatly modified, and many of them are practically eliminated by the discoveries in immunization and specific drug therapy, but it remains important to understand the basic principles of immunity, resistance, susceptibility and epidemiology. Practicing physicians must continue to be students always, if they are to keep abreast of advancements in knowledge.

The introduction of such courses as community medicine and psychiatric interviews in the first and second years, is largely a result of student pressure for relevance. If, as suggested earlier, students were required to have a year of employment in a medical center before starting their clinical training, they might appreciate the relevance of basic courses without such pacifiers so early.

III. *Clinical (junior) year* would be devoted to preparation for active participation in the practice of medicine under supervision, the most important part of which is patient interviewing and history taking. Although patient history is emphasized repeatedly in classes, its performance needs to be upgraded considerably. Everything from genetics to the social milieu is important in the understanding of the patient's medical problem, and history should include all of these phases. The classical "family history" should include not only the social situation but also the ethnic background of both parents, fertility, longevity, and causes and ages of individ-

ual deaths. This requires good rapport with the patient, and is rarely established in a first interview. If the patient's interest is aroused and the pertinence of the questioning is clarified, a more meaningful history can be obtained. The interviewer may even ask that the patient think over some of the questions and answer them at another visit. An outline is helpful for the beginner, but should be inconspicuous. The technique of physical examination is acquired at this stage of training, with sensitivity to the patient's total appearance, his expression and mood, as well as any obvious stigmata, followed by the detailed examination.

In addition to the history and the physical examination, laboratory tests should be learned wisely. There should be an opportunity for daily study of the patient, and discussion of findings with faculty or consultants. Since it is impossible to cover disease categories of all the systems with the clinical material available, there should be some time devoted to an organized approach to differential diagnosis, system by system. This information can be transmitted in seminars, at bedside rounds, grand rounds, and by individual assignments, as well as in lectures.

IV. *The fourth year* would be spent on rotating clerkships, with adequate access to senior faculty or consultants, covering not only the major specialties, but also subspecialties. Since the major clinical teaching is on the adult, and since this may be the last opportunity to reach all students regardless of future specialization, two areas should be covered: 1) the basic differences between the adult and the child—physically, chemically and emotionally; 2) the pregnant woman, since any physician—regardless of his specialty—may be called upon to administer to a woman *and a fetus*. If the numbers of infants born with defects are to be reduced, concern for the unborn must be shared by all physicians.

V. *The intern year* could be omitted or elected on a voluntary basis, and would reduce the course to an average of six years. The pursuit of further training would lead the student into his field of choice—general practice, internal medicine, surgery, obstetrics, pediatrics or other specialty or sub-specialty. Once in practice, however, continuing education is essential for all physicians.

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